

Filters for UV Sterilization and Radiometry

Custom Filters from Prototype to Production

Overview of UVC + Sterilization

UVC light in the wavelengths of 207-222 has been found to efficiently kill bacteria and viruses without causing damage to human cells. At these wavelengths, penetration of UV light is harmlessly absorbed by the outer layer of dead skin, whereas longer-wavelength UV light outside of this range can cause severe tissue damage.

Gamma Rays	X-Rays	Ultraviolet (UV)	Visible	Infrared
Vacuum UV	Short Wave UV(UV-C)- causes corneal damage	Middlewave UV(UV-B) - causes sunburn + skin cancer		Longwave UV(UV-A)- causes suntan + sunburn

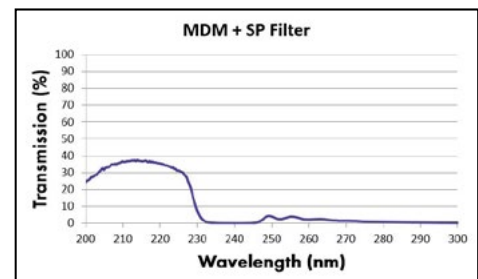
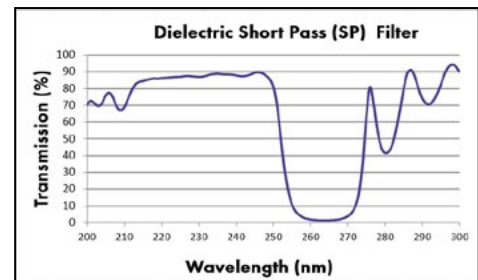
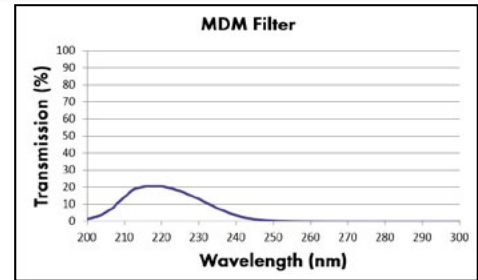
Radiometry is used to assess lamp output and dosage for sterilization.

Challenges in UVC Filter Design

- UV light sources include excimer lamps, xenon lamps, mercury vapor lamps, deuterium arc lamps and UV LEDs. Many UV lamps emit longer wavelengths that are damaging to human skin (245-390nm) and need to be blocked.
- Most materials do not transmit well and can be damaged in this wavelength region due to absorption and scatter. Special Coating materials are required.
- Work in the UVC region should fall within the MPE limits of the US Navy UV radiation Guidelines (1992).

Omega Optical can help you in every step of designing, prototyping and high-volume production. Contact us for custom designs and large quantities!

Omega Filters for UVC



Filter Type	Size (mm) *
MDM	50x50
Dielectric Short Pass (SP)	50x50
Combined MDM & Dielectric SP	50x50

*Maximum size is 100 x 100 mm

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